SEQUENCE LISTING

(1) GENERAL INFORMATION

(i) APPLICANT: Billing-Medel, Patricia A.
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(ii) TITLE OF THE INVENTION: REAGENTS AND METHODS USEFUL FOR DETECTING DISEASES OF THE BREAST

(iii) NUMBER OF SEQUENCES: 22

(iv) CORRESPONDENCE ADDRESS:
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(B) STREET: 100 Abbott Park Road
(C) CITY: Abbott Park
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(E) COUNTRY: USA
(F) ZIP: 60064-3500

(v) COMPUTER READABLE FORM:
(A) MEDIUM TYPE: Diskette
(B) COMPUTER: IBM Compatible
(C) OPERATING SYSTEM: DOS
(D) SOFTWARE: FastSEQ for Windows Version 2.0

(vi) CURRENT APPLICATION DATA:
(A) APPLICATION NUMBER:
(B) FILING DATE:
(C) CLASSIFICATION:

(vii) PRIOR APPLICATION DATA:
(A) APPLICATION NUMBER: 08/742,067
(B) FILING DATE: 31-OCT-1996

(viii) ATTORNEY/AGENT INFORMATION:
(A) NAME: Becker, Cheryl L
(B) REGISTRATION NUMBER: 35,441
(C) REFERENCE/DOCKET NUMBER: 5995.US.P1

(ix) TELECOMMUNICATION INFORMATION:
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(C) TELEX:

(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 229 base pairs
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

CGGCTCGAGC TCTTAGGCTT TGAAGCATTT TTGTNTGTGC TCCCTGATCT TCATGTCACC 60
ACCATGAAGT TCTTAGCAGT CCTGGTACTC TTGGGAGTTT CCATCTNTCT GGTCTCTGCC 120
CAGAATCCGA CAACAGCTGC TNCAGCTGAC ACGNATCCAG CTACTGGTCC TGCTGATGAT 180
GAAGCCCCTG ANGCTGAAAC CACTGCTGCT GCNACCACTG CGACCACTG 229

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 308 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

TAGGCTTTGA AGCATTTTTG TCTGTGCTCC CTGATCTTCA GGTCACCACC ATGAAGTTCT 60
TAGCAGTCCT GGTACTCTTG GGAGTTTCCA TCTTTCTGGT CTCTGCCCAG AATCCGACAA 120
CAGCTGCTCC AGCTGACACG TATCCAGCTA CTGGTCCTGC TGATGATGAA GCCCCTGATG 180
CTGAAACCAC TGCTGCTGCA ACCACTGCGA CCACTGCTGC TCCTACCACT GCAACCACCG 240
CTGCTTCTAC CACTGCTCGT AAAGACATTC CAGTTTTACC CAAATGGGTT GGGGATCTTC 300
CGAATGGT 308

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 197 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

GTTTTACCCA AATGGGTTGG GGATCTCCCG AATGGTAGAG TGTGTCCCTG AGATGGAATC 60
AGCTTGAGTC TTCTGCAATT GGTCACAACT ATTCATGCTT CCTGTGATTT CATCCAACTA 120
CTTACCTTGC CTACGATATC CCCTTTATCT CTAATCAGTT TATTTTCTTT CAAATAAAAA 180
ATAACTATGA GCAACAT 197

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 482 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ix) FEATURE:
(A) NAME/KEY: base_polymorphism
(B) LOCATION: 54
(D) OTHER INFORMATION: /note= "'K' represents a G/T polymorphism at this position"

(ix) FEATURE:
(A) NAME/KEY: base_polymorphism
(B) LOCATION: 312
(D) OTHER INFORMATION: /note= "'Y' represents a C/T polymorphism at this position"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

```
CGGCTCGAGC TCTTAGGCTT TGAAGCATTT TTGTCTGTGC TCCCTGATCT TCAKGTCACC      60
ACCATGAAGT TCTTAGCAGT CCTGGTACTC TTGGGAGTTT CCATCTTTCT GGTCTCTGCC     120
CAGAATCCGA CAACAGCTGC TCCAGCTGAC ACGTATCCAG CTACTGGTCC TGCTGATGAT     180
GAAGCCCCTG ATGCTGAAAC CACTGCTGCT GCAACCACTG CGACCACTGC TGCTCCTACC     240
ACTGCAACCA CCGCTGCTTC TACCACTGCT CGTAAAGACA TTCCAGTTTT ACCCAAATGG     300
GTTGGGGATC TYCCGAATGG TAGAGTGTGT CCCTGAGATG GAATCAGCTT GAGTCTTCTG     360
CAATTGGTCA CAACTATTCA TGCTTCCTGT GATTTCATCC AACTACTTAC CTTGCCTACG     420
ATATCCCCTT TATCTCTAAT CAGTTTATTT TCTTTCAAAT AAAAAATAAC TATGAGCAAC     480
AT                                                                    482
```

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 553 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ix) FEATURE:
(A) NAME/KEY: base_polymorphism
(B) LOCATION: 543
(D) OTHER INFORMATION: /note= "'R' represents an A/G polymorphism at this position"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

```
GAATTCGGCT CGAGCGGCTC GAGCTCTTAG GCTTTGAAGC ATTTTTGTCT GTGCTCCCTG      60
ATCTTCATGT CACCACCATG AAGTTCTTAG CAGTCCTGGT ACTCTTGGGA GTTTCCATCT     120
TTCTGGTCTC TGCCCAGAAT CCGACAACAG CTGCTCCAGC TGACACGTAT CCAGCTACTG     180
GTCCTGCTGA TGATGAAGCC CCTGATGCTG AAACCACTGC TGCTGCAACC ACTGCGACCA     240
CTGCTGCTCC TACCACTGCA ACCACCGCTG CTTCTACCAC TGCTCGTAAA GACATTCCAG     300
TTTTACCCAA ATGGGTTGGG GATCTCCCGA ATGGTAGAGT GTGTCCCTGA GATGGAATCA     360
GCTTGAGTCT TCTGCAATTG GTCACAACTA TTCATGCTTC CTGTGATTTC ATCCAACTAC     420
TTACCTTGCC TACGATATCC CCTTTATCTC TAATCAGTTT ATTTTCTTTC AAATAAAAAA     480
TAACTATGAG CAACAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA     540
AARGGGCGGC CGC                                                        553
```

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 68 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

```
AGCTCGGAAT TCCGAGCTTG GATCCTCTAG AGCGGCCGCC GACTAGTGAG CTCGTCGACC      60
CGGGAATT                                                              68
```

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 68 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

```
AATTAATTCC CGGGTCGACG AGCTCACTAG TCGGCGGCCG CTCTAGAGGA TCCAAGCTCG      60
```

GAATTCCG 68

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 24 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

AGCGGATAAC AATTTCACAC AGGA 24

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

TGTAAAACGA CGGCCAGT 18

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

ACTGCTCGTA AAGACATTCC 20

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 19 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

GGGACACACT CTACCATTC 19

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

AAGCCCCTGA TGCTGAAACC 20

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 23 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

TGCAGAAGAC TCAAGCTGAT TCC 23

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 23 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

CCCAGTCACG ACGTTGTAAA ACG 23

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 27 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

GCGGCCGCCG GGACACACTC TACCATT 27

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 90 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: None

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

```
Met Lys Phe Leu Ala Val Leu Val Leu Leu Gly Val Ser Ile Phe Leu
 1               5                  10                  15
Val Ser Ala Gln Asn Pro Thr Thr Ala Ala Pro Ala Asp Thr Tyr Pro
            20                  25                  30
Ala Thr Gly Pro Ala Asp Asp Glu Ala Pro Asp Ala Glu Thr Thr Ala
        35                  40                  45
Ala Ala Thr Thr Ala Thr Thr Ala Ala Pro Thr Thr Ala Thr Thr Ala
    50                  55                  60
Ala Ser Thr Thr Ala Arg Lys Asp Ile Pro Val Leu Pro Lys Trp Val
65                  70                  75                  80
Gly Asp Leu Pro Asn Gly Arg Val Cys Pro
                85                  90
```

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 39 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: None

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

```
Ala Gln Asn Pro Thr Thr Ala Ala Pro Ala Asp Thr Tyr Pro Ala Thr
 1               5                  10                  15
Gly Pro Ala Asp Asp Glu Ala Pro Asp Ala Glu Thr Thr Ala Ala Ala
            20                  25                  30
Thr Thr Ala Thr Thr Ala Ala
        35
```

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 39 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: None

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

```
Thr Thr Ala Thr Thr Ala Ala Pro Thr Thr Ala Thr Thr Ala Ala Ser
 1               5                  10                  15
Thr Thr Ala Arg Lys Asp Ile Pro Val Leu Pro Lys Trp Val Gly Asp
            20                  25                  30
Leu Pro Asn Gly Arg Val Cys
        35
```

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: None

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

```
Ala Arg Lys Asp Ile Pro Val Leu Pro Lys Trp Val Gly Asp Leu Pro
 1               5                  10                  15
Asn Gly Arg Val Cys
            20
```

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: None

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

```
Ala Ala Pro Ala Asp Thr Tyr Pro Ala Thr Gly Pro Ala Asp Asp Glu
 1               5                  10                  15
Ala Pro Asp Ala Glu
            20
```

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 8 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

```
Asp Tyr Lys Asp Asp Asp Asp Lys
 1               5
```

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

```
Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Asn Met His Thr Glu His
 1               5                  10                  15
His His His His His
            20
```